

South-South Residents' Awareness of Nema's Communication Approach During The 2019 Flooding Management in Nigeria

GODWIN, Judith Worigwarum

Department of Linguistics and Communication Studies,
University of Port Harcourt, Rivers State
judithgodwin04@gmail.com

UDOUDO, Aniefiok Jackson

Department of Linguistics and Communication Studies,
University of Port Harcourt, Rivers State
anieudoudo@yahoo.com

NWACHUKWU, Fautinus Ginikanwa

Department of Linguistics and Communication Studies,
University of Port Harcourt, Rivers State
fautinus_nwachukwu@uniport.edu.ng
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Abstract

This study examined the South-South residents' awareness of NEMA's communication approach during the 2019 flooding management in Nigeria. The objective of the study was to find out the communication strategies that were employed by the National Emergency Management Agency in communicating flooding information to the target audiences in 2019 in South-South Nigeria. Participatory communication theory was used for the theoretical framework. The study employed the survey research design and the research instruments were questionnaire. The study population comprised of residents of South-South Nigeria, within the age category of 20 to 84 which was 14,180,716 and using the Keyton's Sampling Technique, the sample size of 384 was drawn from the population. Data was analysed using descriptive statistics with frequency table of values and measures such as: weighted mean score. The study revealed out that the level of awareness of the 2019 flooding received by the affected communities in South-South Nigeria from NEMA before the flood incident was very poor and lacked the collaboration of the leaders and residents of the communities, the media/media of communication that NEMA and residents of the affected communities in South-South Nigeria employed before, during and after the flooding in 2019 comprised of the mass media, interpersonal communication and traditional communication, majority of residents of the communities in South-South Nigeria could not reach out directly to NEMA during the flooding in 2019 because they did not have direct contact with the agency. The study concluded that the communication strategies of NEMA were not sufficient in stimulating the residents to carry out their recommendations in 2019 flooding, but were complemented by the mobilisation efforts of the leaders and the eagerness of the residents as a result of their previous flooding experiences. The study recommended that NEMA should focus more efforts on improving the awareness campaign strategy which is a proactive measure and ensure the actual participation of the leaders and residents of the affected communities to gain their trust and elicit their commitment.

Keywords: *South-South Residents, Awareness, Communication Approach, 2019 Flooding, Management*

Introduction

Flooding remains one of the most common and devastating natural disasters globally, affecting millions of people annually. In Nigeria, the menace of flooding is recurrent, especially in the South-South region, a low-lying area susceptible to excessive rainfall and overflowing rivers. The 2019 flooding was particularly severe, affecting several communities and resulting in displacement, loss of property, and environmental degradation. Effective communication during disaster management is critical, as it plays a key role in ensuring that vulnerable populations are aware of risks and equipped with appropriate knowledge to mitigate impacts. In this regard, the National Emergency Management Agency (NEMA), Nigeria's leading disaster management organization, employed various communication strategies to inform and mobilize residents. However, the level of awareness and effectiveness of NEMA's communication approach among South-South residents during the 2019 flooding remains a subject of interest.

Effective communication during disaster situations is essential for ensuring public safety. As emphasized by Shaw and Kim (2020), timely, clear, and reliable information dissemination is central to reducing the risks posed by natural disasters, including floods. Communication methods, ranging from traditional media to digital platforms, help in transmitting warnings, guidelines, and real-time updates to the public. In Nigeria, NEMA is responsible for coordinating disaster response efforts, including issuing flood warnings and providing relief measures to affected communities. However, understanding how these communication efforts are received by the target population is critical for improving future disaster management strategies (Olowu & Fajonyomi, 2019).

The South-South region of Nigeria, which comprises states like Rivers, Delta, and Bayelsa, is geographically prone to flooding due to its location along the Niger Delta. As noted by Olorunfemi and Raheem (2018), the region's vulnerability is exacerbated by factors such as poor urban planning, deforestation, and inadequate drainage systems. Given this high-risk environment, communication strategies must be particularly robust to ensure that residents are adequately prepared for flooding events. The effectiveness of NEMA's communication approach in 2019 thus raises questions regarding the extent to which residents were aware of the impending flood risks, evacuation procedures, and available relief resources.

Studies have shown that awareness and understanding of disaster preparedness are directly influenced by the effectiveness of communication strategies (Ikem, 2020). In the case of NEMA, the agency uses a combination of mass media, social media, and community engagement to disseminate information. However, challenges such as limited internet access, illiteracy, and language barriers in certain parts of the South-South may affect the reach and effectiveness of these communication efforts. Consequently, it is important to examine how well these strategies were tailored to meet the specific needs of the South-South population during the 2019 floods (Adedeji et al., 2020).

Moreover, disaster communication is not just about sending out information; it also involves ensuring that the target audience can understand and act on the information provided. According to Cretikos et al. (2017), the use of local languages, culturally sensitive messaging, and trusted community figures can significantly enhance the effectiveness of communication in disaster-prone areas. For NEMA's 2019 flood management efforts to be considered

effective, the agency needed to consider these factors in its communication approach. This study, therefore, seeks to explore whether NEMA's strategies were effectively localized and if residents were able to comprehend and act upon the information they received.

NEMA's communication efforts also need to be evaluated in the context of disaster risk perception. Studies such as those by Wachinger et al. (2018) suggest that how people perceive the risks associated with natural disasters influences their response to warnings and safety protocols. In regions like the South-South, where flooding is a recurrent issue, there may be a degree of "flood fatigue," where residents become desensitized to warnings and fail to take appropriate precautions. Investigating how NEMA's communication addressed these psychological aspects could provide insight into whether the communication strategy was effective in prompting the desired responses from residents.

Furthermore, assessing the residents' awareness of NEMA's communication approach provides valuable feedback for improving future disaster preparedness initiatives. NEMA has been criticized in the past for a lack of consistency in its communication during emergencies, which has led to confusion and delayed response efforts (Okoli & Ezeh, 2019). By exploring how South-South residents perceived and interacted with NEMA's 2019 communication efforts, this study aims to identify gaps and opportunities for enhancing the agency's communication strategies. The 2019 flooding in Nigeria's South-South region underscores the critical need for effective communication in disaster management. This study aims to assess the awareness of NEMA's communication approach among South-South residents during the flood management process. The findings will contribute to the body of knowledge on disaster communication in Nigeria and provide practical recommendations for improving NEMA's communication strategies in future disasters.

Statement of the Problem

Flooding continues to pose a significant challenge to the South-South region of Nigeria, disrupting livelihoods, displacing communities, and causing considerable environmental damage. The 2019 flood, in particular, exposed the vulnerability of this region to natural disasters, highlighting the need for timely and effective disaster management interventions. Despite the National Emergency Management Agency (NEMA)'s efforts to manage the crisis, concerns have emerged regarding the level of awareness and preparedness of residents. A key component of disaster management is communication, yet it remains unclear how effective NEMA's communication approach was in reaching and informing the South-South residents during the 2019 flooding. The inability of the public to access, understand, or act on critical information could lead to unnecessary losses and delayed responses in the face of disasters.

Previous study has shown that the effectiveness of disaster communication is influenced by factors such as message clarity, the medium of dissemination, and audience engagement (Adedeji et al., 2020). In the context of the South-South region, challenges such as limited internet access, language diversity, and varying levels of literacy may have hindered the residents' ability to fully comprehend and act on NEMA's communication. Additionally, the recurring nature of floods in the region raises the possibility that some residents might have become desensitized to warnings, resulting in a lower risk perception and reduced compliance with evacuation orders or safety protocols. The effectiveness of NEMA's communication strategy, therefore, becomes a critical issue in determining the extent to which residents were aware of flood risks and how they responded to the 2019 flooding.

Given these challenges, it is necessary to investigate the awareness level of South-South residents regarding NEMA's communication efforts during the 2019 flood. Understanding the gaps in communication will help improve disaster preparedness and response strategies,

particularly in flood-prone regions. This study seeks to address the problem by examining the extent to which NEMA's communication approach during the 2019 flooding was effective in creating awareness among South-South residents. The findings will provide insights into the strengths and weaknesses of NEMA's communication strategies and contribute to the development of more effective communication frameworks for future disaster management.

Aim and Objectives of the Study

This study examines the effectiveness of NEMA's communication approach during the 2019 flooding in Nigeria's South-South region, assessing residents' awareness and identifying gaps to improve future disaster management strategies. The objectives of the study are to:

1. Ascertain the level of awareness of the 2019 flooding received by the affected communities in South-South Nigeria from the National Emergency Management Agency before the flood incidents;
2. Identify the media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South before, during and after the flooding in 2019;
3. Find out the extent to which the residents of South-South Nigeria responded to the information communicated to them by the National Emergency Management Agency before, during and after the 2019 flooding;

Literature Review

Conceptual Framework

Flood and Flooding

Cirella et al (2019) point out that flooding "is the most common of all environmental hazards and regularly claims more than 20,000 lives per year and adversely affects approximately 75 million people worldwide" (p. 2). Flooding devastation in Nigeria and globally in recent times have become so grievous and of serious concern to the government and the people. Nwankwo et al (2016) observe that in recent times flooding and its consequences have been unparalleled as many lives and millions of people are terribly affected globally. They note that flooding events which occurred in Nigeria on July 2011 resulted in colossal loss of lives and properties, destruction of roads, bridges and schools, while affecting about 5,000 people with about twenty-five death toll and economic losses of about N50 billions. Echendu (2020) notes that most of the 200 million people in Nigeria suffer several threats from flood disaster as a result of perennial flooding. This is also the situation in South-South Nigeria where every year residents suffer enormous losses due to flood disasters. Thousands of people lose their accommodations, farmlands with crops and properties and businesses worth millions of naira are lost to flooding and on many occasions lives are lost. Public infrastructure such as roads, schools and electricity are damaged, causing untold hardship for the people in the affected communities.

Flood Disaster Management

Disaster Management can be defined as the overall activities involved in organising and coordinating the resources and duties that are required to reduce the adverse effects of disaster on people, properties and the environment. Such activities as preparedness, response and recovery that are undertaken to avert or minimise the magnitude of the vulnerability to the

disaster. Altay and Ramirez (2010) view disaster management as the integration of different groups, including the government, public and private organisations, NGOs and other stakeholders to put their efforts together for preparedness, mitigation, response and recovery from the effect of disasters. Since natural disasters cannot be stopped from occurring, the right and effective efforts can be made to curb its devastating effects. Kelly (1996) describes disaster management as the range of activities designed to sustain control over disaster and emergency conditions and to make available a framework for assisting those who are at risk to avoid or recover from the impact of the disaster. It involves activities that will be carried out before, during and after the disaster. These activities have been grouped under three main stages namely: before the disaster (pre-disaster), during the disaster (disaster occurrence) and after disaster (post-disaster). The early warning message which precedes the above three stages provides the basic information required for the planning stages.

The early warning messages ensue from the annual flood predictions and other predictions that arise from climate change during the year. Agbonkhese et al (2014) describes early warning as “a proactive mechanism in which certain recognised bodies or agencies take to the study of climate and human interactions with the environment towards foretelling the occurrences of floods and thus issuing warnings to both individuals and government structures” (p. 33). The purpose of the early warning message is to stir up the affected communities, the government and all the stakeholders to start preparing to prevent or reduce the effect of the predicted flooding.

The Media

The media are identified as one of the key collaborators in flood disaster management and beyond that they have to play their roles to the society in agreement with the social responsibility theory. Soola (2016) points out that in consonant with the social responsibility and other relevant theories of the mass media, both the mainstream and the social media have the duties to inform, educate and create public awareness on issues that affect the wellbeing of the people. As observed by Ganiyu et al (2017), the media are major stakeholder in flood management and their contributions are recognised as very essential. In all the communication strategies and theories already mentioned, the media appear to be ubiquitous.

The stakeholders in flood disaster management include many people, professionals and groups from different sectors whose roles and supports are significant in managing disaster, but the shift from reactive to proactive based disaster management as noted by Ganiyu et al (2017), increases the role of the media and disaster managers in informing, educating and sensitising the affected people and stakeholders early enough to ensure their preparedness for the impending flooding. Oke et al (2018) note that communicating the issue early and consistently to all the participants is important to improve their endeavours for preparedness and response in order to lessen the impacts of flooding. They point out that the media use their messages to inform, sensitise and educate the affected communities and stakeholders to stimulate resilience and reduce susceptibility before and after flooding.

Theoretical Framework

Participatory Communication Theory

Paulo Freire is presumed to be the proponent of participatory theory. Through his work as an adult educator in Brazil in the 1950s, he aided oppressed peasants to develop their own requirements for improved living condition and to gain freedom from being dominated. The participatory approach started with a search for an effective communication approach for development, especially in the developing countries, where the hegemonic and hierarchical

modernisation approach was used to impose development projects on the people without involving the users to find out what they need. Kheerajit and Flor (2013) view participatory communication as a crucial factor because it provides opportunity for all stakeholders to collaborate towards proffering solution that will remove environmental and social challenges that are forestalling sustainable development.

Participatory communication theory is applicable to this study since it focuses on bringing together all the stakeholders that are affected or concern by the flooding disaster in one way or the other to be actively involved in various activities and processes of proffering solutions and implementing the plans to reduce the effects of flood disasters in the communities. The inclusion of the affected communities in the whole stages of the participatory process will not only create opportunities for them to share their past experiences, local skills and knowledge, but will also motivate their trust and complete commitment to the mitigation activities. Through regular stakeholders' trainings, workshops, meetings and other forms of interpersonal communication, the community members who are not well educated and exposed will become more knowledgeable, empowered, develop self-confidence and control over their environment. They will also be able to realise their innate abilities and capacities to engage in new flood mitigation methods in tackling flooding.

Empirical Review

Obaze et al (2020) did a study on "A Perceptual Analysis of Communication and Natural Disasters Awareness across Communities in Edo North Senatorial District of Edo State." The purpose of the study was to assess the communication and natural disasters awareness in Edo North Senatorial District of Edo State with emphasis on erosion and flooding issues in the communities in the senatorial district.

The study used the survey research design and the instrument for the collection of data for this study was questionnaire. The convenient sampling technique was used to select a representative sample of respondents for the study. The researchers conveniently selected persons and professionals who are knowledgeable in disaster management, environment and environmental communication to get their opinion on the subject of the study. The population of three hundred and thirty (330) residents spread across the local governments in Edo North Senatorial district of Edo State.

Findings of the study showed that the disaster awareness amongst the people in the studied area was high. Majority of the residents indicated that they already received information about the impending flooding and erosion before the occurrence. The major channels through which information on flooding and erosion was received were: the radio, television and interpersonal communication (through opinion leaders). Among all the channels use to communicate messages on flooding and erosion to the people, radio was the most available as it was more affordable for the community residents.

Nwafor (2021) did a study on "Influence of flood risk awareness information on the adaptive behaviour of residents in flood prone areas in South-East Nigeria." The main objective of the study was to ascertain if there is availability of flood risk awareness information, major source of the information, influence of accessibility on diffusion, relationship between awareness, adoption, and adaptive behaviour.

The researcher adopted the survey design in carrying out the study with a projected population of 21,298,033 and a sample size of 384 drawn using Krejcie and Morgan sample size determination table. The population of the study was 21,298,033. A sample of 384 was selected using Krejcie & Morgan sample size determination table. A multistage sampling approach with a combination of probability and nonprobability sampling was adopted. The

researcher used purposive sampling technique to select one Local Government Area that has suffered from flood disaster from 2012 to 2019 from each of the five South-East States.

Findings of the study showed that flood risk awareness information was available in the area covered by the study. The information were mainly available through the radio and television broadcast. However, the available flood risk awareness message contents were not understandable enough to the residents of the flood prone communities to influence adaptive behaviour. It was established that radio and television broadcast were not sufficient in disseminating contents on flood risk awareness information. There is need for other modes of communication to stimulate the acceptance of positive behaviour towards flood disaster management.

Methodology

The research design employed in this study was the survey method which gets the views of the respondents on various issues of the study. The population for the study comprised residents of South-South, Nigeria, which are: Akwa Ibom, Bayelsa, Cross River, Delta, Edo and Rivers States. This study looked at the total population of all the six states in the South-South which is put at 21,044,081 by the National Population Census of 2006. Using the 2.5% annual growth, the total population for 2019 was projected at 27,883,407. Out of this number, Akwa Ibom has 5,170,218 (18.5%), Bayelsa - 2,258,482 (8.1%) Cross River - 3,833,209 (13.7%), Delta - 5,448,990 (19.5%), Edo - 4,284,210 (15.3%) and Rivers - 6,888,299 (24.7%). However, the age category used for the study were those within the ages of 20 and 84. This is because the people within this age range are in better position to know what actions to take during flooding. Based on this, the age distributions in the six states investigated were as follows: Akwa Ibom - 2,611,745, Bayelsa - 1,126,273, Cross River - 1,910,582, Delta - 2,749,865, Edo - 2,209,097, Rivers - 3,573,154, totalling 14,180,716. The population for this study therefore, was 14,180,716.

The sample size for this study was 384 drawn from the Keyton's Sampling Technique (2001). Keyton (2001) proposes that the sample size for a population within the range of 100,000 and above should be 384 and the sampling technique used for this study was multi-stage. The purposive and convenience sampling technique was employed in selecting three out of the six states of South - South Nigeria based on proximity. The purposive method was also used in selecting from each of these three states, two local government areas (one rural and one urban) that experienced flooding in 2019. Data was collected with the use of the questionnaire and a total of three hundred and eighty-four (384) copies of the questionnaire was generated and administered to the study sample of three hundred and eighty-four (384) respondents who were between the ages of 20 and 84 years in South-South Nigeria. The data derived from the research instruments were presented and analysed using quantitative approaches. Descriptive statistics with frequency table of values and measures such as: weighted mean score (WMS) was used to address the research questions.

RESULTS AND DISCUSSION

Table 1 Level of Awareness of the 2019 Flooding that the Affected Communities in South-South Nigeria Received from NEMA before the Flooding.

Items	SA	A	D	SD	Total	Mean Score (fx)	Decision
My community was flooded in 2019. The National Emergency Management Agency (NEMA) carried out an awareness campaign to prepare the members of the community for the flooding before it occurred.	176	45	248	198	667	1.75	Rejected
You were aware of the 2019 flooding BEFORE it occurred.	988	294	30	21	1333	3.50	Accepted
During the awareness campaign on 2019 flooding there were regular visits of NEMA personnel for meetings with leaders and members of the community for discussions on the necessary actions to take in order to prevent or reduce the effect of the flooding	104	0	272	219	595	1.56	Rejected
I was in attendance in some of those meetings	36	6	236	252	530	1.39	Rejected
I participated freely in the discussions in the meetings	4	27	224	259	514	1.35	Rejected
Weighted Mean Score					3639	1.91	Rejected

Table 1 contains data about the level of awareness of the 2019 flooding that the affected communities in South-South Nigeria received from NEMA before the flooding. The table contains five items that addressed Research Question One. The weighted mean score of the table stood at 1.91 which is rejected. The data in Table 4.2 show that the Level of Awareness of the 2019 flooding that the affected communities in South-South Nigeria received from NEMA before the flooding was low.

Table 2 Media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South before the flooding in 2019

Items	SA	A	D	SD	Total	Mean Score (fx)	Decision
The information I received BEFORE the flood was through Radio	668	366	78	53	1165	3.06	Accepted
The information I received BEFORE the flood was through television	544	270	192	59	1065	2.80	Accepted
The information I received BEFORE the flood was through Newspaper	340	114	314	101	869	2.28	Rejected
The information I received BEFORE the flood was through billboard	0	12	320	217	549	1.44	Rejected
The information I received BEFORE the flood was through flyers	0	0	282	240	522	1.37	Rejected
The information I received BEFORE the flood was through Women / men community meeting	168	189	356	98	811	2.13	Rejected
The information I received BEFORE the flood was through Age grades	144	147	350	121	762	2.00	Rejected
The information I received BEFORE the flood was through social clubs	224	156	252	147	779	2.04	Rejected
The information I received BEFORE the flood was through Religious gatherings	708	129	194	64	1095	2.87	Accepted
The information I received BEFORE the flood was through school	432	108	252	111	903	2.37	Rejected
The information I received BEFORE the flood was through Town crier	436	255	164	105	960	2.52	Accepted
The information I received BEFORE the flood was through Town hall / village square gathering	396	225	200	107	928	2.44	Rejected
The information I received BEFORE the flood was through market place	356	114	316	96	882	2.31	Rejected

The information I received BEFORE the flood was through Social media	408	171	190	127	896	2.35	Rejected
The information I received BEFORE the flood was through discussions with friends	624	300	118	66	1108	2.91	Accepted
The information I received BEFORE the flood was through family members	888	291	64	30	1273	3.34	Accepted
The information I received BEFORE the flood was through neighbours	736	354	86	36	1212	3.18	Accepted
The information I received BEFORE the flood was through Community leaders	260	375	218	82	935	2.45	Rejected
The information I received BEFORE the flood was through senior members of the community	216	273	252	110	851	2.23	Rejected
Weighted Mean Score					17565	2.43	Rejected

Table 2 contains data that addressed the media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South Nigeria before the flooding in 2019. Out of the nineteen items in the Table, twelve were rejected by majority of the respondents, while seven were accepted. The weighted mean score of the Table stood at 2.43 which is rejected. The data in Table 2 show that media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South Nigeria before the flooding in 2019 were the mass media, traditional communication modes and interpersonal communication modes.

Table 3 Media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South during the flooding in 2019

Items	SA	A	D	SD	Total	Mean Score (fx)	Decision
The information I received DURING the flood was through Radio	616	165	136	107	1024	2.69	Accepted
The information I received DURING the flood were through television	304	162	202	153	821	2.15	Rejected
The information I received DURING the flood was	92	15	298	207	612	1.61	Rejected

through Town hall / village square gathering								
The information I received DURING the flood was through Community leaders	296	201	212	137	846	2.22	Rejected	
The information I received DURING the flood was through Town crier	372	174	176	145	867	2.28	Rejected	
The information I received DURING the flood was through Conversations with friends	692	261	86	81	1120	2.94	Accepted	
The information I received DURING the flood was through family	884	294	64	33	1275	3.35	Accepted	
The information I received DURING the flood was through neighbours	668	270	88	83	1109	2.91	Accepted	
Weighted Mean Score					7674	2.24	Rejected	

Table 3 contains data that addressed the media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South Nigeria during the flooding in 2019. The Table contains eight items that addressed Research Question Two. The majority of the respondents accepted four of the items, while they rejected four. The weighted mean score stood at 2.24 which indicates rejected. The data in Table 3 show that the media/modes of communication employed by the National Emergency Management Agency and residents of the affected communities in South-South Nigeria during the flooding in 2019 were the mass media, traditional communication modes and interpersonal communication modes.

Table 4 Media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South after the flooding in 2019

Items	SA	A	D	SD	Total	Mean Score (fx)	Decision
The information I received AFTER the flood was through radio	492	96	184	137	909	2.39	Rejected
The information I received AFTER the flood was through television	372	111	192	158	833	2.19	Rejected

The information I received AFTER the flood were through Town hall / village square gathering	340	177	258	111	886	2.33	Rejected
The information I received AFTER the flood was through Community leaders	420	198	210	108	936	2.46	Rejected
The information I received AFTER the flood was through Town crier	436	261	142	117	956	2.51	Accepted
The information I received AFTER the flood was through Conversations with friends	728	246	86	77	1137	2.98	Accepted
The information I received AFTER the flood was through family	836	240	64	63	1203	3.16	Accepted
The information I received AFTER the flood was through neighbours	772	282	62	66	1182	3.10	Accepted
Weighted Mean Score					8042	2.35	Rejected

Table 4 contains data that addressed the media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South after the flooding in 2019. The Table contains eight items that addressed Research Question Two. The majority of the respondents rejected four while they accepted four. The weighted mean score of the Table was 2.35 which is rejected. The data in Table 4 show that the media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South Nigeria after the flooding in 2019 were the mass media, traditional communication modes and interpersonal communication modes.

Table 5 Languages used by National Emergency Management Agency and residents of the affected communities in South-South before, during and after the flooding in 2019

Items	SA	A	D	SD	Total	Mean Score (fx)	Decision
English language was used in sending the 2019 flooding information to me before, during and after the flooding	868	201	108	43	1220	3.20	Accepted
Pidgin English was used in sending the 2019 flooding information to me before, during and after the flooding	764	264	106	49	1183	3.10	Accepted

Vernacular was used in sending the 2019 flooding information to me before, during and after the flooding	620	249	126	80	1075	2.82	Accepted
Weighted Mean Score					3478	3.04	Accepted

Table 5 contains data that addressed the languages used by National Emergency Management Agency and residents of the affected communities in South-South before, during and after the flooding in 2019. The Table contains three items that addressed Research Question Two, which are: English Language, Pidgin English Language and Vernacular. The majority of the respondents accepted the three languages and the weighted mean score of the table stood at 3.04 which is accepted. The data in Table 5 show that the languages used by National Emergency Management Agency and residents of the affected communities in South-South before, during and after the flooding in 2019 were effective in spreading the flooding information.

Table 6: Extent to which residents of South-South Nigeria responded to the instructions communicated to them by NEMA before, during and after the flooding

Items	SA	A	D	SD	Total	Mean Score (fx)	Decision
During the awareness campaign NEMA recommended actions to be taken by the members of the community in order to prevent or reduce the effect of the flooding.	372	216	204	117	909	2.39	Rejected
I carried out these instructions	368	225	238	98	929	2.44	Rejected
During the flooding I received information from NEMA on what actions to be taken to prevent or reduce the effect of the flooding	176	69	258	188	691	1.81	Rejected
I carried out the recommendations given by NEMA during the flood	424	201	232	95	952	2.50	Accepted
AFTER the flood I received information from NEMA with recommendations on what actions that should be taken to reduce the effect of the flooding	252	141	252	148	793	2.08	Rejected

I carried out these recommendations as required 404 156 272 95 927 2.43 Rejected

Weighted Mean Score 5201 2.28 Rejected

Table 6 contains data that addressed the extent to which residents of South-South Nigeria responded to the instructions communicated to them by NEMA before, during and after the flooding. The table consist of six items that addressed Research Question Three. One of the items was accepted by majority of the respondents while five were rejected. The weighted mean score for the table was 2.28 which indicate rejected. The data in Table 6 show low level of compliance of the residents of South-South Nigeria with the recommendations of NEMA on the actions to be taken before, during and after the flooding to prevent or reduce the effect of the flooding in 2019.

Table 7 Factors that affected the extent to which residents of South-South Nigeria carried out the actions recommended by NEMA to reduce/avert the effects of the flooding in 2019

Items	SA	A	D	SD	Total	Mean Score (fx)	Decision
I was not convinced that their recommendations were capable of preventing or reducing the effect of the flooding	320	177	214	138	849	2.23	Rejected
I did not have the resources required to carry out their recommendations	336	159	256	119	870	2.28	Rejected
The recommended actions and behaviour were too difficult to carry out	340	147	288	106	881	2.31	Rejected
I was used to flooding and had better ways of handling it whenever it occurred	944	246	58	37	1285	3.37	Accepted
I did not understand the recommendations	276	99	314	125	814	2.14	Rejected
Weighted Mean Score					4699	2.47	Rejected

Table 7 contains data that addressed the factors that determined the response of the residents of South-South Nigeria to the actions recommended by NEMA to reduce or avert the effects of the flooding in 2019. The Table contains five items, out of which the respondents rejected four, while they accepted one. The weighted mean score for the Table was 2.47 which is rejected. The data in Table 7 show that the level of compliance of residents of South-South Nigeria with the instructions communicated to them by NEMA before, during and after the 2019 flooding was low.

Discussion of Findings

Research Question One: What level of awareness of the 2019 impending flooding did the affected communities in South-South Nigeria receive from the National Emergency Management Agency before the flood incidents?

The data presentation in Table 1 and the in-depth interview reports were used to address the level of awareness of the 2019 flooding that the affected communities in South-South Nigeria received from NEMA before the flooding. The data in Table 1 revealed that the level of awareness of the 2019 flooding received by residents of the communities in South-South Nigeria before the flooding was very poor with negative weighted mean score of 1.91 (rejected). Out of the five items that were used to examine the subject matter, only one was accepted while four were rejected. On whether the National Emergency Management Agency (NEMA) carried out an awareness campaign to prepare the members of the community for the flooding before it occurred, the majority of the respondents rejected with a mean score of 1.75. With a mean score of 1.56, the majority of the respondents strongly disagreed with the statement that during the awareness campaign on 2019 flooding there were regular visits of NEMA personnel for meetings with leaders and members of the community for discussions on the necessary actions to take in order to prevent or reduce the effects of the flooding. The majority of the respondents also strongly disagreed with the statement that, they were in attendance in those meetings with a mean score of 1.39 and that, they participated freely in the meetings, with a mean score of 1.35. With weighted mean score of 3.50, the majority of the respondents strongly agreed that, they were aware of the 2019 flooding before it occurred.

The finding based on the data in Table 4.2 is that the communities in South-South Nigeria were aware of the 2019 flooding before it occurred, even though the level of awareness campaign carried out in the communities was very insignificant. The data also revealed that there was also insignificant level of collaboration between the National Emergency Management Agency and South-South residents in managing 2019 flooding in the region. In essence the communication strategy employed by NEMA and the communities in South-South Nigeria in managing 2019 was not based on participatory communication theory. Kheerajit and Flor (2013) point out that participatory communication is a crucial factor that enables stakeholders' collaboration towards proffering solution to environmental and social challenges that are preventing sustainable development, such as the flooding disaster in South-South Nigeria. Bessette (2004) highlights that, participatory communication emphasises on enabling interactions among different stakeholders that are involved in solving common problems.

Research Question Two: What media/modes of communication did the National Emergency Management Agency and residents of the affected communities in South-South Nigeria employ before, during and after the flooding in 2019?

The media/modes of communication employed by the National Emergency Management Agency and residents of the affected communities in South-South Nigeria before, during and after the flooding in 2019 were presented in Tables 3, 4, 5 and 6. The data in Table 3 revealed that respondents received information before the flooding through various media/modes of communication which include, the mass media, interpersonal communication, traditional communication modes and the social media. For the mass media, most of respondents agreed that they received information through the radio with a mean score of 3.06 and television with 2.80 a mean score. Other mass media channels through which respondents received

information before the flooding but in minimal levels were newspaper with a mean score of 2.28, billboard with a mean score of 1.44 and flyer with a mean score of 1.37.

In interpersonal communication mode, the majority of the respondents received information before the flooding through conversation with family, with a mean score of 3.34, conversation with neighbours with a mean score of 3.18 and conversation with friends, with a mean score of 2.91. Fewer number of the respondents received information through the community leaders with a mean score of 2.45 and senior members of the community with a mean score of 2.23. In traditional communication mode, many of the respondents received information through the religious gathering with a mean score of 2.87 and town crier with a mean score of 2.52. Fewer number of respondents received information before the flooding through women/men community meeting with a mean score of 2.13, age grades meeting with a mean score of 2.00, social clubs with a mean score of 2.04, school with a mean score of 2.37, town hall/village square gathering with a mean score of 2.44, market place with a mean score of 2.31 and social media with a mean score of 2.35.

In all the media/modes of communication the National Emergency Management Agency and residents of the affected communities in South-South Nigeria used before, during and after the flooding in 2019, the most used was the interpersonal – communication – conversation with family with a mean score of 3.34 and conversation with neighbours with a mean score of 3.18 – followed by the mass media – the Radio 3.06 with a mean score of 3.06.

Table 4 presents data on the media/modes of communication employed by National Emergency Management Agency and residents of the affected communities in South-South during the flooding in 2019. The data revealed that various communication media/modes were employed by NEMA and the residents of South-South during the flooding. The mass media channels employed were radio, with a mean score of 2.69 and television with a mean score of 2.15, interpersonal communication modes used were conversations with friends with a mean score of 2.94, conversations with family with a mean score of 3.35 and conversations with neighbour with a mean score of 2.91 and community leaders with a mean score of 2.22 and traditional communication medium used were town hall / village square gathering with a mean score of 1.61 and town crier with a mean score of 2.28. The data presented in Table 4 revealed that the majority of the respondents received information during the flooding through interpersonal communication modes of conversation with family with a mean score of 3.35, conversations with friends with a mean score of 2.94 and conversations with neighbours with a mean score of 2.91 and the radio with a mean score of 2.69.

Table 5 presented data that addressed the modes/media of communication employed by National Emergency Management Agency and residents of the affected communities in South-South Nigeria after the flooding in 2019. Like the communication media/modes employed before and during the flooding, NEMA and residents of South-South employed various media/modes of communication to disseminate information after the flooding. Mass media channels employed were radio with a mean score of 2.39 and television with a mean score of 2.19. Interpersonal communication employed were conversations with family with a mean score of 3.35, conversations with neighbours with a mean score of 3.10 and conversations with friends with a mean score of 2.98. Traditional communication mode employed were town hall / village square gathering with a mean score of 2.33 and town crier with a mean score of 2.51. Here again majority of the residents received information through conversations with family with a mean score of 3.35, conversations with neighbours with a mean score of 3.10 and conversations with friends with a mean score 2.98 and traditional communication mode – town crier with a means score of 2,51.

Research Question Three: To what extent did the residents of South-South Nigeria respond to the instructions communicated to them by the National Emergency Management Agency before, during and after the flood incidents?

Data presented in Tables 6 and 7 were used to address the research question on the extent to which residents of South-South Nigeria responded to the instructions communicated to them by the National Emergency Management Agency before, during and after the flooding. With a mean score of 2.39, the respondents disagreed that during the awareness NEMA recommended actions to be taken by the members of the community campaign in order to prevent or reduce the effect of the flooding. The respondents disagreed that they carried out the recommended action with a mean score of 2.44. The respondents disagreed that they received recommendations from NEMA during the flooding on what actions that should be taken to prevent or reduce the effect of the flooding with a mean score of 1.81, but agreed with a mean score of 2.50 that they carried out the recommendations. The number of those that agreed that they complied with NEMA's instruction was higher than the number that received the recommendations. This could imply that some of those who carried out the required actions may have done so, not in compliance with NEMA's instructions, but by their own initiatives or as inspired by other factors. With a mean score of 2.08 the respondents disagreed that they received information from NEMA after the flooding on recommendations for what actions that should be taken to reduce the effects of the flooding and with a mean score of 2.43 rejected that they carried out these recommendations as required.

Data presented in Table 4.8 showed that with a mean score 2.23, the respondents disagreed with the statement that they were not convinced that the recommendations were capable of preventing or reducing the effects of the flooding. With a mean score of 2.28, the respondents disagreed with the statement that they did not have the resources required to carry out the recommendations. With a mean score of 2.31, the respondents disagreed with the statement that the recommended actions and behaviour were too difficult to carry out. With a mean score of 2.14, the respondents disagreed with the statement that they did not understand the recommendations.

The indication from the data is that the low level of the compliance of the residents with the recommendations from NEMA was not based on any of the above factors. The respondents agreed that they were used to flooding and had better ways of handling it whenever it occurred with a mean score of 3.37. It means that the communication strategies used were not effective to stimulate the residents to adopt the recommendations of the agency in replacement for what they were used to doing.

Oakley et al (2020) point out that prevention motivation theory aids organisers of intervention programmes to understand why some individuals who are vulnerable to a particular disaster are reluctant to accept the recommended actions that will protect them from the threats. Haer et al (2016) highlight that the choice of an affected person to adopt the recommended actions that is required to safeguard him/her from the looming danger depends on the extent to which the self-protection message is able to arouse him/her. Protection motivation theory proposes that the affected individuals should be made to know their level of susceptibility to the impending disaster, the efficacy of the recommended action to safeguard them and the efficacy of the individual to adopt the recommended action. The deduction is that the information received by the respondents from NEMA about the flood was not effective

enough to stimulate the required level of response from the residents of the affected communities, based on the data presented in Tables 4.7.

The poor level of information received by the residents on the recommendations from NEMA as shown in Tables 4.7 is reflected on the responses from the leaders who were interviewed. All the respondents said that they did not receive any recommendations directly from NEMA before, during or after the flooding on the actions that should be taken to prevent or reduce the effect of the flooding, but that the community leaders mobilised the residents to carry out the required actions to safeguard themselves from effects of the flooding. Respondent Ogah of Agudama in Bayelsa State said that the recommendations his community had were not from NEMA, but that the community leaders out of their initiatives mobilised the residents of the community to prepare for the flooding, including evacuation of debris out of the water ways. The leaders also advised all those living in the flood prone areas to relocate to higher ground.

The responses from the community leaders further explains why the number of the residents who received the recommendations were fewer, with a mean core of 1.81 than those who carried out the recommendations, with a mean score of 2.50 (Table 6). It means that some of the residents did not respond to the recommendations from NEMA but from their community leaders. Self-mobilisation, where the affected people take initiatives and responsibilities with or without limited external influence is an important element of participatory communication as identified by Sinthumule and Mudau (2019). Participatory communication is basically about the involvement of all the stakeholder, in all the process of development and planning to execution of the project (Kheerajita and Flor 2013).

Some of the respondents added that the mass media information they received included the recommendation that the affected communities should evacuate debris from the drainage and canals in their communities and for those that lived in flood prone areas to relocate to higher grounds. This supports the data in Tables 6 and 7 which shows that few of the residents of the communities in South-South Nigeria received recommendations on what actions to take to prevent or reduce the effects of the flooding with the mean scores of 1.81 and 2.08.

Conclusion

The finding of this study provides the empirical information of the communication strategies employed by the National Emergency Management Agency in managing flooding South-South communities in 2019, highlighting the media/mode of communication used for each of the three phases of flood disaster management, which are: the pre-disaster, disaster occurrence and post disaster.

The study revealed that NEMA carried out awareness campaign in South-South communities that were affected by flooding in 2019. The awareness campaign involved radio jingles and distribution of flyers in the communities. But the awareness campaign was very scanty and unnoticed by the majority of the residents of the affected communities. This is an indication that there was no collaboration between NEMA and the affected communities and it calls for enhancement in NEMA's awareness campaign programmes and the involvement of the affected communities (participatory communication theory) in planning for flooding disaster communication.

The study highlighted that the media/modes of communication employed by NEMA and residents of South-South Nigeria in 2019 flooding consisted of mass media, interpersonal

communication, traditional communication, telephone and letter writing. The mass media were used by NEMA in disseminating information to the communities. The community leaders employed the traditional modes in spreading information in the community, while the interpersonal communication aided in spreading the flooding information.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. In order to prevent or reduce the continuous and its consequential impediments to the sustainable development of South-South Nigeria, NEMA should focus more efforts on the awareness communication campaign strategy which is a proactive measure and ensure the participation of the affected communities in communication planning to gain their trust and elicit their commitment.
2. NEMA should adopt a convergence of various media/modes of communication in their communication strategies in managing flooding in South-South Nigeria to ensure that every member of the community is adequately communicated to and motivated to adopt the required protective measures.
3. NEMA needs to take advantage of the experiences, skills, self-mobilisation efforts of the leaders and eagerness of the residents of the affected communities in South-South in managing flooding and improving them for effective flood disaster management.

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